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ABSTRACT

This paper addresses whether differences in metalinguistic abilities exist initially in children with oral language processing problems alone, reading problems alone, or both reading and oral language problems and examines whether these selected ability groups respond differently when provided with periodic intervention involving metalinguistic tasks under various encoding and retrieval conditions. The 140 subjects (ages 5-12) were classified as having oral language only problems, reading problems, combined problems, or being at risk. Subjects were administered an experimental battery of metalinguistic tasks. Reassessment after 9 months indicated that there were no significant differences among the four groups in their performance on any of the metalinguistic tasks, when given help in encoding or in retrieving the linguistic categories and relations, though there had been initial differences in the groups' performances. Comparisons of the performance of the four experimental groups and the control children at reassessment indicated that the experimental children performed significantly better than controls on the phoneme segmentation tasks, syntactic tasks, and sentence processing tasks. The two groups did not differ on the lexical tasks. Overall, the results indicated that the encoding and retrieval strategies that were given significantly affected the experimental groups' ability to perform on some types of tasks. (JDD)

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ED 360 777

DIFFERENCES IN THE METALINGUISTIC DEVELOPMENT OF CHILDREN WITH ORAL LANGUAGE, WRITTEN LANGUAGE PROBLEMS, OR BOTH

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In a previous study (Menyuk, et al, 1991) it was found that language impaired pre-school children's ability to meta-process aspects of language was significantly related to their later reading performance in grades one and two. It was also found that metalinguistic abilities develop differently in children with varying levels of oral language skills (Chesnick, et. al., 1992). Children with specific language impairment, or so-called SLI children, continue to perform significantly more poorly on metalinguistic tasks between the ages of 5.6 and 7.6 years than children who are developing language normally and even more poorly than those who are delayed in language development. This was especially the case for syntactic tasks.

In our present study, we are asking whether we can alter this pattern of development by intervening periodically and presenting these metalinguistic tasks under altered encoding and retrieval conditions. We are also asking whether these interventions are helpful to children with reading problems as well as oral language problems. We hope that if we get answers to these questions we can design interventions that will improve the oral language and reading abilities of children with these problems. The children's metalinguistic abilities with various aspects of language are being examined every nine months under these varying encoding and retrieval conditions over a three year period. The first nine month re-assessment has been completed, and some of the results of the initial testing and first reassessment will be presented in two papers.

In this first paper we'll address two questions. The first is whether differences in metalinguistic abilities exist initially in children with oral

language processing problems alone or reading problems alone or with both reading and oral language problems as defined by the criteria we used. The second question is whether these selected ability groups respond differently under the various encoding and retrieval conditions provided in our intervention.

One hundred and forty children between the ages of 5.0 to 12.0 years, who were diagnosed as or suspected of having an oral language and/or reading disorder participated in this study. The children were selected from the recommendations of speech-language pathologists, reading specialists and teachers in various schools within a forty mile radius of a large metropolitan area. Some of the children had already participated in a previous study that focused on children with oral language problems.

The following were the initial criteria for entrance into the study. All of the subjects had normal hearing in at least one ear, had no diagnosed behavioral or emotional disorders, and had a nonverbal I.Q. of at least 85 as measured by the Test of Non-verbal Intelligence (Brown, Sherbenou and Johnsen, 1982). The children were then given oral language and reading tests to see if they met the studies' criteria for an oral language problem, a reading problem or both. These tests were the Test of Language Development-2 Primary or Intermediate (Hammil and Newcomer, 1988), the Metropolitan Readiness Test (Nurss and McGauvran, 1986), or the Stanford Reading Diagnostic Test (Karlsen, Madden and Gardner, 1984).

The children in the oral language disorder group had an overall spoken language quotient below 89 on the TOLD-2, Primary or Intermediate with

pre-reading or reading abilities above the 30th percentile on the standardized reading tests. Children in the reading disorder group scored below the 30th percentile on the Metropolitan Readiness Test, or the Stanford Reading Diagnostic Test but their overall spoken language quotient on the TOLD-2 was above 89. The 'combined' group scored below the 30th percentile on a reading test and had an SLQ below 89 on the TOLD-2. In addition, a small group of 'at-risk' children were included in the study because they were receiving some type of oral language therapy or reading remediation in school. Their scores on both the oral language and reading tests were far from good but not poor enough to meet the study's criteria for inclusion in the other groups.

OVERHEAD WITH NUMBER OF SUBJECTS
FOR THE DIFFERENT GROUPS

As can be seen in the overhead, there were 23 children in the oral language only group, 25 in the reading group, 71 children in the combined group, and 21 children in the 'at-risk' group.

Each of the subjects was administered an experimental battery of metalinguistic tasks. These tasks assessed several aspects of language: phonological segmentation, lexical recall, and semantactic analysis within sentences. A discourse task was given as well but these data will not be presented here. The phonological segmentation tasks assessed both phoneme and syllable segmentation skills; the lexical tasks consisted of a word recall task and rapid automatized naming of colors, numbers, letters, and objects; the semantactic tasks assessed judgment and correction of

non-grammatical sentences, comprehension of subject-object and temporal relations in complex sentences, and oral cloze abilities.

Analyses of the four disability groups' performance on the metalinguistic tasks given initially indicated that the 'combined' group performed more poorly than the three other groups on the phoneme segmentation tasks and the semantactic tasks. They did not differ significantly on the lexical tasks.

Twenty-eight of the subjects were semi-randomly selected from the total population to act as a control group. Both the age range and diagnostic categories were represented in this control group. When the children were seen again after nine months, this group did not receive the intervention measures. Instead, this group was given a similar set of metalinguistic tasks that were given at intake to have baseline data on all the children's meta-linguistic skills. The children in the experimental group were provided with encoding and retrieval strategies as they carried out the metalinguistic tasks. Some of the encoding strategies that were given included segmenting and repeating the presented stimuli. For the retrieval strategies, categorical cues and additional questions were given. On the encoding oral CLOZE task for example, a sentence was presented and the examiner tapped on the table where a word was missing. Then the sentence was repeated and segmented and the child was given three choices. For example, "The baby ____ on the floor." "The baby/ (play, crawled, smiled) on the floor." For the retrieval condition for the oral CLOZE task, a sentence was segmented upon presentation and the child

was given a cue to help think of an appropriate word. "The _____ was read/ by the girl's father." What was read by the girl's father?

All of the subjects' raw scores for each of the phonological segmentation, lexical, and semantactic tasks ere converted to standard scores with a mean of 0 and a standard deviation of 1 at time one. Two way Analyses of Variance were performed to determine whether the groups performed differently in terms of their performance on these tasks from Time 1 to Time 2.

When the experimental children's performance on these tasks was reassessed after nine months, it was found that there were no significant differences among the four groups in their performance on any of the metalinguistic tasks when given help in encoding or in retrieving the linguistic categories and relations. As stated earlier, there were initial differences in the groups' performances. These results indicate that giving this type of help led to the children in the combined group to perform, at least, as well as the children in the other groups.

Next, comparisons of the performance of these four groups and the control children were carried out from Time 1 to Time 2. It was found that the experimental children, who were given the encoding and retrieval strategies, performed significantly better than the control children, who did not receive the interventions, on the phoneme segmentation tasks and the semantactic tasks, or the sentence processing tasks. However, the two groups did not differ significantly on the lexical tasks

OVERHEAD FOR PHONOLOGICAL TASKS

As can be seen in this overhead, the performance of the children in the experimental groups improved more than the control children regardless of diagnostic category. Although not significantly different, they improved more when given the retrieval strategies than when given the encoding strategies. In contrast, the control group actually did worse from Time 1 to Time 2 in their performance on these phonological tasks.

OVERHEAD FOR SYNTACTIC TASKS

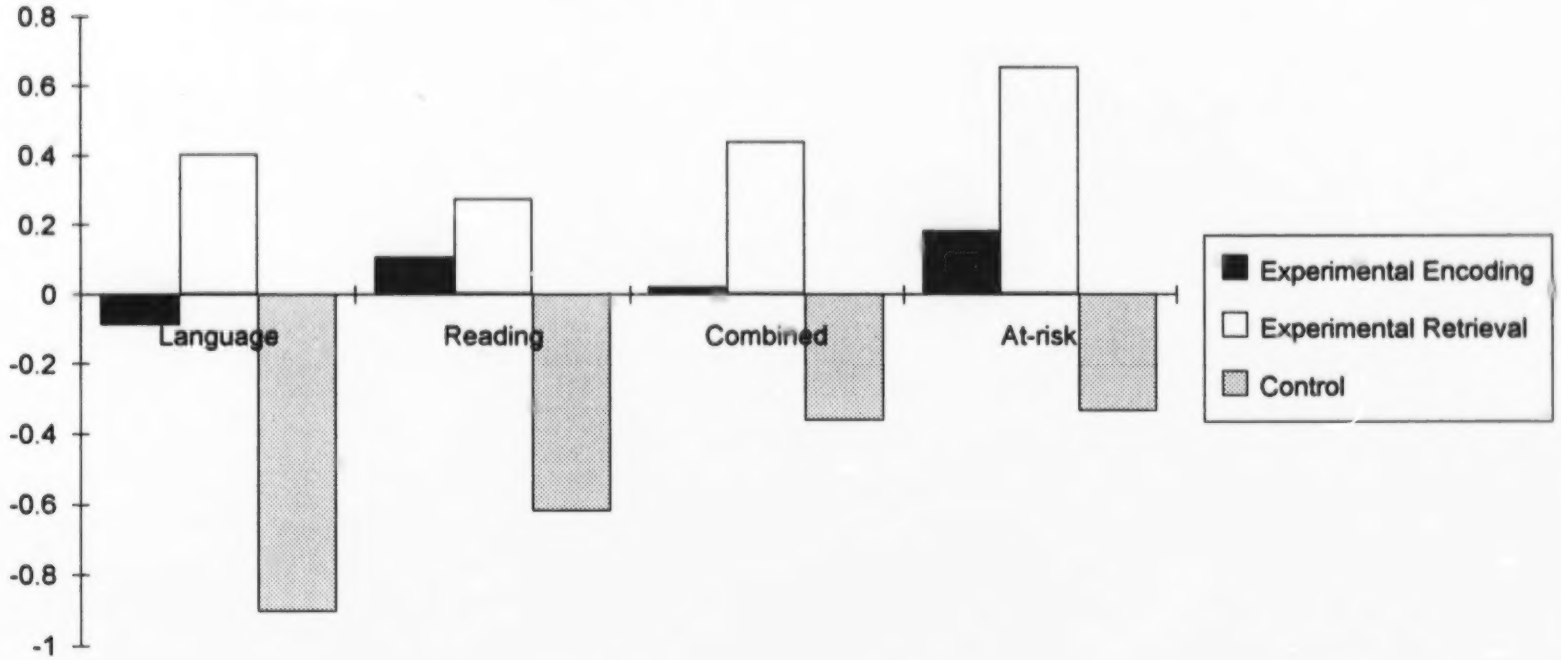
The next overhead shows the results of the children's performance on the semantactic tasks. As can be seen, the improved performance of the children in the experimental groups was significantly different compared to the control group. These results indicate that both the encoding and retrieval strategies were advantageous in helping the children perform these types of semantactic tasks regardless of diagnostic category..

OVERHEAD FOR LEXICAL TASKS

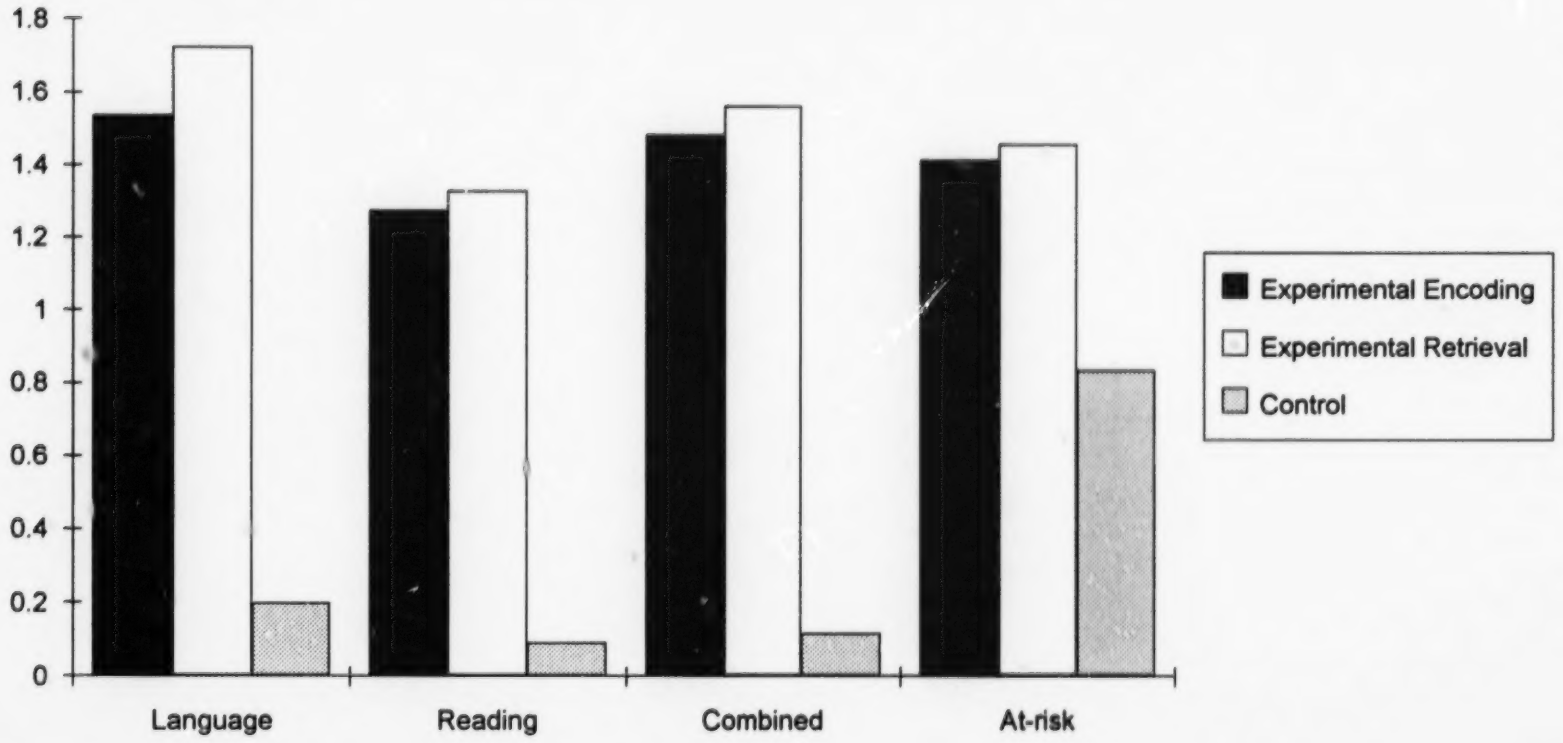
This overhead shows the children's performance on the lexical tasks. As stated earlier, the improved performance for the experimental and control groups was not significantly different. In fact, the children in the oral language control group improved in their performance more than the children in the oral language experimental group. Either lexical retrieval is particularly difficult for these children or the intervention strategies were not helpful.

Overall, these results indicate that the encoding and retrieval strategies that were given for the phoneme segmentation tasks and the semantactic tasks significantly affected the experimental groups' ability to perform on these types of tasks.

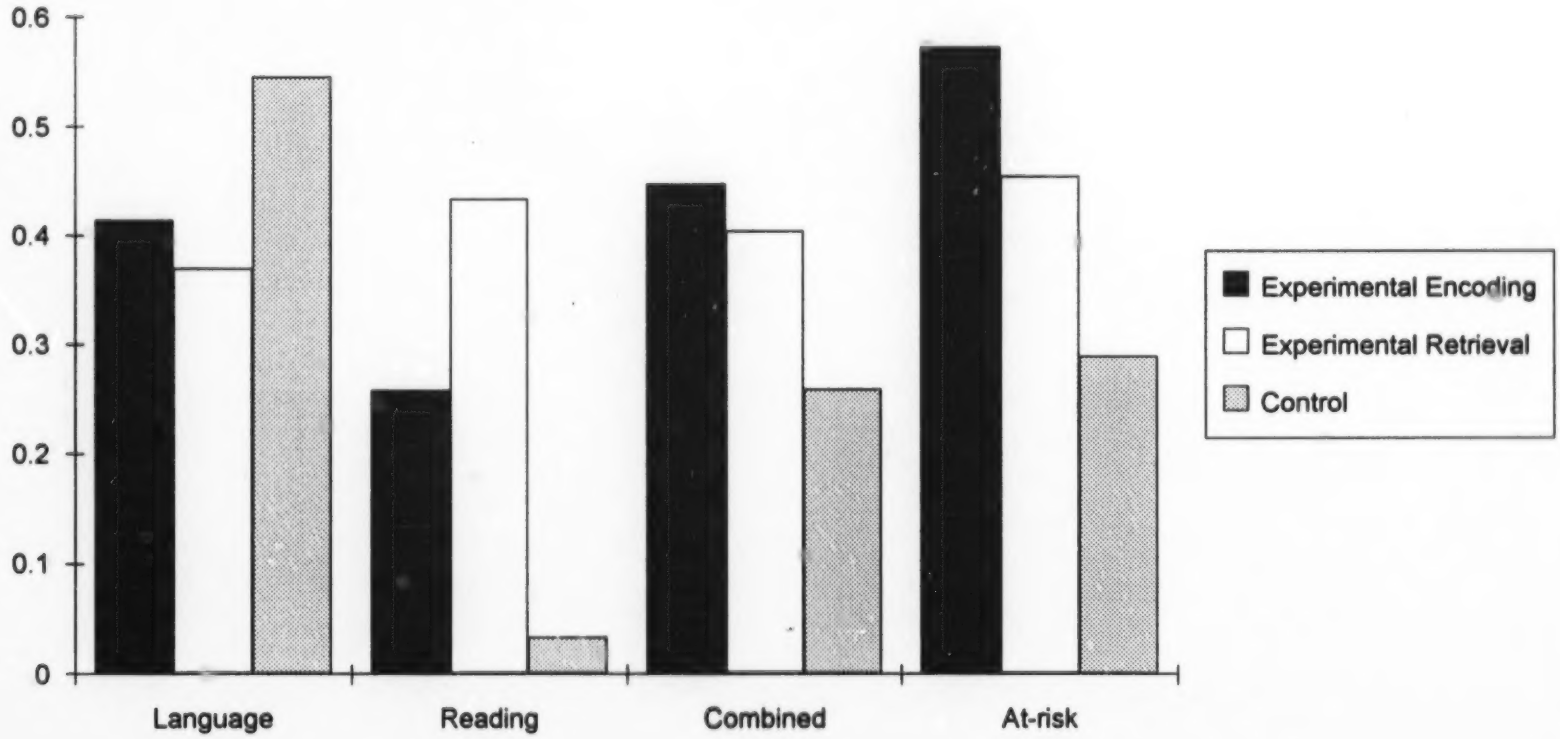
PHONEME SEGMENTATION TASKS: Differences in Performance for Experimental & Control Groups from Time 1 to Time 2



SYNTACTIC TASKS: Differences in Performance for Experimental & Control Groups from Time 1 to Time 2



LEXICAL TASKS: Differences in Performance for Experimental & Control Groups from Time 1 to Time 2



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